

FIG. 1E

09753700.010201

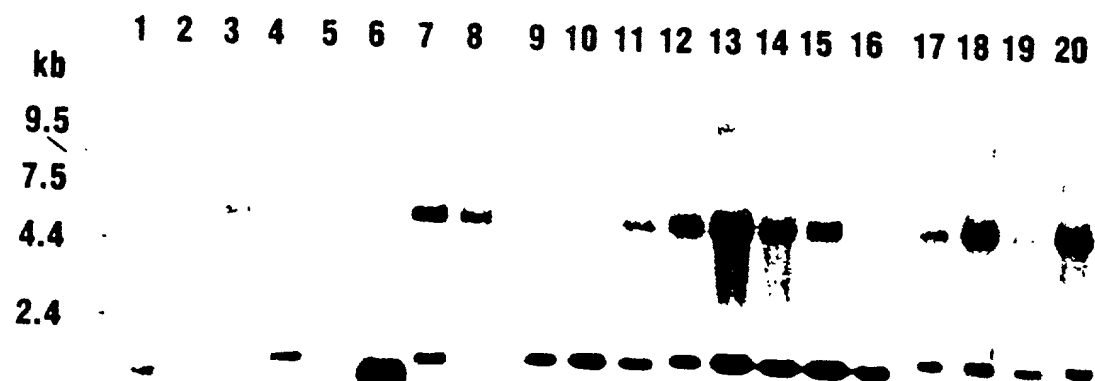
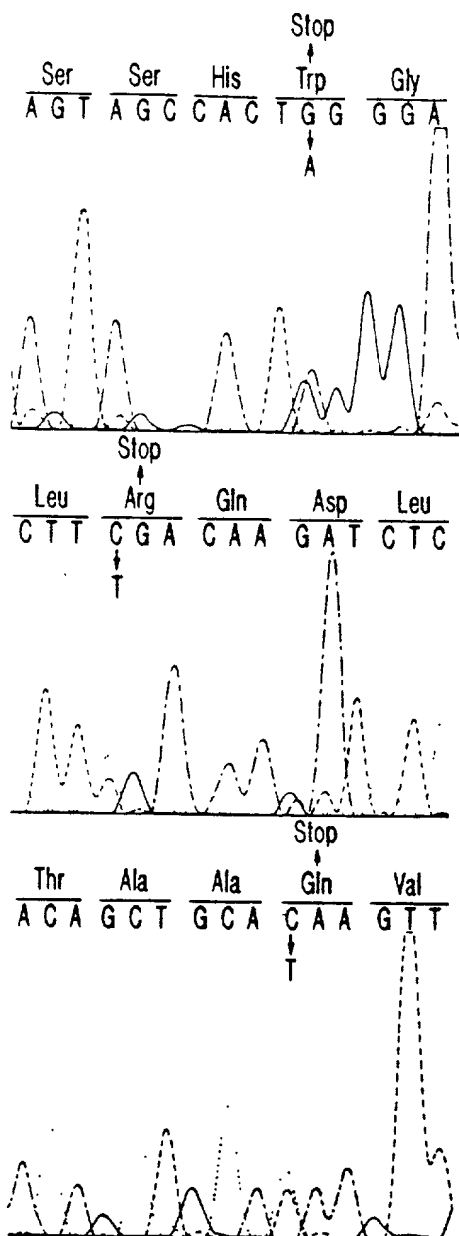
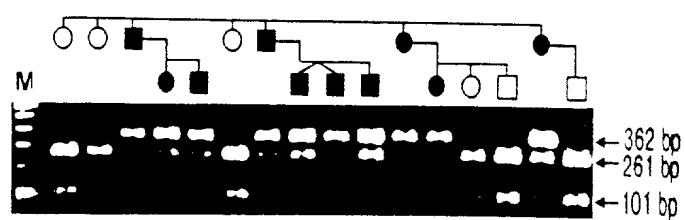


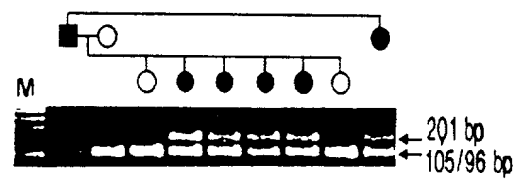
FIG. 2



Family 97



Family 1605



Family 1601

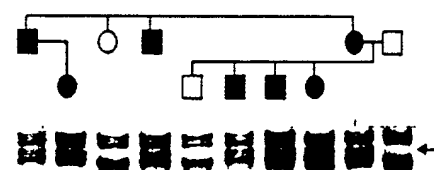


FIG. 3

CTM-4 *MVNSSRVQPOQPGDAKRPPAPRAPDPGRMLNAGCAAVGASLAAPGGLCEQRCLEIEMQIRIQAAANDPPAGAASPSPPLSSCSQAWMSRDNPGFEAEEEE 100

CTM-4 EEVEGEEGGMVVEMDVEMWRPGSRSAASAASVSSVGARSRLGGYHGAGHPSCGRRRREDQGPCCSPVGGDPLRHRLPLEGQPPRVAMAERLVRLGL 200

CTM-4 *WGRRLMEESSTNREKYLKSVLRELVTYLLFLVLCILTYGMSNNVYYTTRMNSQLFLDTPVSKTEKTNFKTLSSMEDFWKFTEGSLDLGLYMKQPSNQ 300

PKD1 (3655)FLAKEAEARKVKRLHGMLRSLVLMFLVTLASTGDSCHGAY.RIOS...AIKQELHSRAFLAITRSEELPMMAHVLPLYH....GNO

ZK945.9 (1708)ENRKMDEQLFITIRDMLCFFASLYIMVMTLYYCKDRHGMYQOLEMSTILNINQKNYGDNT.FMSIQHADDEFWDAWRESLATALLASWYDGNP

CTM-4 *TEADNRSFIYENLLLGVPRIQQLRVNRNGSCSIPQDLRDEIKECYDVYSVSESDRAPFGPRNGTA.MIY.TSEKDLNGSSHGIIATYSGAGYLDLSRTRE 400

PKD1 SSPE.....LGPRLRQVRLQEQALYDPGPBRVHTCSAAGFSTSDYDVGWESLHNGSGTWAY.SAPDLLGAWSWGSCAVYDSGYVOELGLSLE

ZK945.9 AYGMRAYMNDKVSRSMSGITRQVTRTKS (1828) (1878)YTYKTSE.ELSTETVSGLYSYSGGYTIMSGTQA

CTM-4 *ETAQVASLKKNVMLDRGTRATFIDFSVYNANINLFCVRLLVFEFPATGGVIPSWOFOPLKLRVYVTFEDFFLAACEIIFECFIFYVVEELE.IRIHKL 500

PKD1 ESRDLRFLOLHNWLDNRSRAVLELTRYSPAVGLHAAVTLRLFEFPAGRALAALSVRPFLRLSAGLSPLITSVCLLFAVHFAVAEARTW.HREGTW

ZK945.9 EITLFNKLDSERMIDDHTRAVIIIEFSAYNAQINFSVQLLVEIKRSGIYLPNSWESVRLIKSESGDGVVKKYEMLYIFFSVLIFVKEIV (2005)

VACCAIE-1 (1517)FTWVFSLECVLKVAFGL

CTM-4 *HYFR.SFWNCLDVIVIVLSVAIGINIRYSNVEV.LLOFL.EDQNTFPNFEHLAYMOIQENNIAAVTVEFWIKLKFIFENFNTMSQOLSTMTMSCAKDLF 598

PKD1 RVLRLGAWARMLLVALTAATALVRLAQLGADRQ.WTRFVRGRPRRFTSFDOVAQISSAARGLAASLIFLLVKAQQLRFPRQMSVFGKTLGRALPELL

ZK945.9 (2039)WNFMDLIVGALAVASVLAYTIRQRTNRAMEDFNANNGNSYINLTQORWEIVFSYCLAGAVFFTSCKMIRILRENRIGVLAATLONLGAIV

VACCAIE-1 NYFR.DTNWIFDFITVIGSITEILLTDSKLVNTSG.F.....NMSFLK.....LFRARLIKLRQGYTIRILLMTFVQSFKALP

CTM-4 *GFAIMEFIIFLAYAQLAVLVFGTQVDFSTFOECIFTQRIILGDIINFAEIEAN.RVLGPIYFTTEVFEMFILLMFLAINDTYSEVKS...AQOKA 696

PKD1 GVTGLVLVAVAYAOALILLVSSCVDSIMVAQALL...VLGCTGLSTLCPAESMHLSPLLCVGLMARLWALRGALRLGAVILRMRYHALRGELYRPAMEPO

ZK945.9 SFGIAFLFESMTENSVAIVAVLGNKMGGYRSIMATFOTALAGMLGKIDVTSIQP.....ISOFAFVIMLYMI (2199)

VACCAIE-1 YVCLLIAMLFFIYAIIGMOVFG NNFERSFFGSIMLLFRSATGE.AWOEIERCG.TDLAYVYFVSIFFCFLMLNLFAVAVINDFEYLLTRD.....

(1630) (1644) (1605) (1692)

CTM-4 *EMELSDLIRKGYHKAIVKIKLKNTVDDISSESLROGGGKLNFDLRODLKKGKHTDAEIEAIFIKYDQDGOELTEHEHQOMRDLEKEREDLDLHSSLP 800

PKD1 DYEMVELF.....LRRL (4139)

ZK945.9

VACCAIE-1

CTM-4 *PMSSRSFPRSLDSEDDDEDSGHSRRRGSISSGVSYEEFOVLVRRVDRMEHSIGSIVSKIDAVIAVLEIMERAKLKRREVLGRLLDGVAEDERLGRDSEI 900

CTM-4 HREOMERLVREELERWESDDAASQISHGLTQVGLNGQPRPRSSPSSQS.TEGMEGAGNGSSNVHV 968

VACCAIE-1 (2039)ERRRSKERKHLSPDVSRCSNSEERGTOADWESPERQSRSPSEGRSQTPNRQGTGLSESSI (2100)

FIG. 4A

09753008.040201

E	I	E	A	I	F	T	K	Y	D	Q	D	G	D	Q	E	L	T	E	H	E	H	Q	Q	M	R	D	D	L	(754-782)
															:														
E	n			n	n			n	*	*	*	*	G	I	*			E	n			n	n	n	n	n		(EF-hand test)	
								x	y	z	-y	-x	-z														(coordination vertices)		

FIG. 4B

										GGC	TCC	TGA	GGC	GCA	CAG	18
CGC	CGA	GCG	CGG	CGC	CGC	GCA	CCC	GCG	CGC	CGG	ACG	CCA	GTG	ACC	GCG	66
ATG	GTG	AAC	TCC	AGT	CGC	GTG	CAG	CCT	CAG	CAG	CCC	GGG	GAC	GCC	AAG	114
Met	Val	Asn	Ser	Ser	Arg	Val	Gln	Pro	Gln	Gln	Pro	Gly	Asp	Ala	Lys	
1				5					10					15		
CGG	CCG	CCC	GCG	CCC	CGC	GCG	CCG	GAC	CCG	GGC	CGG	CTG	ATG	GCT	GGC	162
Arg	Pro	Pro	Ala	Pro	Arg	Ala	Pro	Asp	Pro	Gly	Arg	Leu	Met	Ala	Gly	
			20					25					30			
TGC	GCG	GCC	GTG	GGC	GCC	AGC	CTC	GCC	GCC	CCG	GGC	GGC	CTC	TGC	GAG	210
Cys	Ala	Ala	Val	Gly	Ala	Ser	Leu	Ala	Ala	Pro	Gly	Gly	Leu	Cys	Glu	
		35					40					45				
CAG	CGG	GGC	CTG	GAG	ATC	GAG	ATG	CAG	CGC	ATC	CGG	CAG	GCG	GCC	GCG	258
Gln	Arg	Gly	Leu	Glu	Ile	Glu	Met	Gln	Arg	Ile	Arg	Gln	Ala	Ala	Ala	
	50					55					60					
CGG	GAC	CCC	CCG	GCC	GGA	GCC	GCG	GCC	TCC	CCT	TCT	CCT	CCG	CTC	TCG	306
Arg	Asp	Pro	Pro	Ala	Gly	Ala	Ala	Ala	Ser	Pro	Ser	Pro	Pro	Leu	Ser	
65					70				75						80	
TCG	TGC	TCC	CGG	CAG	GCG	TGG	AGC	CGC	GAT	AAC	CCC	GGC	TTC	GAG	GCC	354
Ser	Cys	Ser	Arg	Gln	Ala	Trp	Ser	Arg	Asp	Asn	Pro	Gly	Phe	Glu	Ala	
				85					90					95		
GAG	GAG	GAG	GAG	GAG	GAG	GTG	GAA	GGG	GAA	GAA	GGC	GGA	ATG	GTG	GTG	402
Glu	Glu	Glu	Glu	Glu	Glu	Val	Glu	Gly	Glu	Glu	Gly	Gly	Met	Val	Val	
			100					105					110			
GAG	ATG	GAC	GTA	GAG	TGG	CGC	CCG	GGC	AGC	CGG	AGG	TCG	GCC	GCC	TCC	450
Glu	Met	Asp	Val	Glu	Trp	Arg	Pro	Gly	Ser	Arg	Arg	Ser	Ala	Ala	Ser	
		115					120					125				
TCG	GCC	GTG	AGC	TCC	GTG	GGC	GCG	CGG	AGC	CGG	GGG	CTT	GGG	GGC	TAC	498
Ser	Ala	Val	Ser	Ser	Val	Gly	Ala	Arg	Ser	Arg	Gly	Leu	Gly	Gly	Tyr	
	130					135					140					
CAC	GGC	GCG	GGC	CAC	CCG	AGC	GGG	AGG	CGG	CGC	CGG	CGA	GAG	GAC	CAG	546
His	Gly	Ala	Gly	His	Pro	Ser	Gly	Arg	Arg	Arg	Arg	Arg	Glu	Asp	Gln	
145					150				155						160	
GGC	CCG	CCG	TGC	CCC	AGC	CCA	GTC	GGC	GGC	GGG	GAC	CCG	CTG	CAT	CGC	594
Gly	Pro	Pro	Cys	Pro	Ser	Pro	Val	Gly	Gly	Gly	Asp	Pro	Leu	His	Arg	
				165					170					175		
CAC	CTC	CCC	CTG	GAA	GGG	CAG	CCG	CCC	CGA	GTG	GCC	TGG	GCG	GAG	AGG	642
His	Leu	Pro	Leu	Glu	Gly	Gln	Pro	Pro	Arg	Val	Ala	Trp	Ala	Glu	Arg	
			180					185					190			

FIG. 5A

CTG	GTT	CGC	GGG	CTG	CGA	GGT	CTC	TGG	GGA	ACA	AGA	CTC	ATG	GAG	GAA	690
Leu	Val	Arg	Gly	Leu	Arg	Gly	Leu	Trp	Gly	Thr	Arg	Leu	Met	Glu	Glu	
		195					200					205				
AGC	AGC	ACT	AAC	CGA	GAG	AAA	TAC	CTT	AAA	AGT	GTT	TTA	CGG	GAA	CTG	738
Ser	Ser	Thr	Asn	Arg	Glu	Lys	Tyr	Leu	Lys	Ser	Val	Leu	Arg	Glu	Leu	
	210					215				220						
GTC	ACA	TAC	CTC	CTT	TTT	CTC	ATA	GTC	TTG	TGC	ATC	TTG	ACC	TAC	GGC	786
Val	Thr	Tyr	Leu	Leu	Phe	Leu	Ile	Val	Leu	Cys	Ile	Leu	Thr	Tyr	Gly	
225					230					235					240	
ATG	ATG	AGC	TCC	AAT	GTG	TAC	TAC	TAC	ACC	CGG	ATG	ATG	TCA	CAG	CTC	834
Met	Met	Ser	Ser	Asn	Val	Tyr	Tyr	Tyr	Thr	Arg	Met	Met	Ser	Gln	Leu	
				245					250					255		
TTC	CTA	GAC	ACC	CCC	GTG	TCC	AAA	ACG	GAG	AAA	ACT	AAC	TTT	AAA	ACT	882
Phe	Leu	Asp	Thr	Pro	Val	Ser	Lys	Thr	Glu	Lys	Thr	Asn	Phe	Lys	Thr	
			260					265					270			
CTG	TCT	TCC	ATG	GAA	GAC	TTC	TGG	AAG	TTC	ACA	GAA	GGC	TCC	TTA	TTG	930
Leu	Ser	Ser	Met	Glu	Asp	Phe	Trp	Lys	Phe	Thr	Glu	Gly	Ser	Leu	Leu	
		275					280					285				
GAT	GGG	CTG	TAC	TGG	AAG	ATG	CAG	CCC	AGC	AAC	CAG	ACT	GAA	GCT	GAC	978
Asp	Gly	Leu	Tyr	Trp	Lys	Met	Gln	Pro	Ser	Asn	Gln	Thr	Glu	Ala	Asp	
	290					295					300					
AAC	CGA	AGT	TTC	ATC	TTC	TAT	GAG	AAC	CTG	CTG	TTA	GGG	GTT	CCA	CGA	1026
Asn	Arg	Ser	Phe	Ile	Phe	Tyr	Glu	Asn	Leu	Leu	Leu	Gly	Val	Pro	Arg	
305					310					315					320	
ATA	CGG	CAA	CTC	CGA	GTC	AGA	AAT	GGA	TCC	TGC	TCT	ATC	CCC	CAG	GAC	1074
Ile	Arg	Gln	Leu	Arg	Val	Arg	Asn	Gly	Ser	Cys	Ser	Ile	Pro	Gln	Asp	
				325					330					335		
TTG	AGA	GAT	GAA	ATT	AAA	GAG	TGC	TAT	GAT	GTC	TAC	TCT	GTC	AGT	AGT	1122
Leu	Arg	Asp	Glu	Ile	Lys	Glu	Cys	Tyr	Asp	Val	Tyr	Ser	Val	Ser	Ser	
				340				345					350			
GAA	GAT	AGG	GCT	CCC	TTT	GGG	CCC	CGA	AAT	GGA	ACC	GCT	TGG	ATC	TAC	1170
Glu	Asp	Arg	Ala	Pro	Phe	Gly	Pro	Arg	Asn	Gly	Thr	Ala	Trp	Ile	Tyr	
		355					360					365				
ACA	AGT	GAA	AAA	GAC	TTG	AAT	GGT	AGT	AGC	CAC	TGG	GGA	ATC	ATT	GCA	1218
Thr	Ser	Glu	Lys	Asp	Leu	Asn	Gly	Ser	Ser	His	Trp	Gly	Ile	Ile	Ala	
	370					375					380					
ACT	TAT	AGT	GGA	GCT	GGC	TAT	TAT	CTG	GAT	TTG	TCA	AGA	ACA	AGA	GAG	1266
Thr	Tyr	Ser	Gly	Ala	Gly	Tyr	Tyr	Leu	Asp	Leu	Ser	Arg	Thr	Arg	Glu	
385					390					395					400	

FIG. 5B

GAA	ACA	GCT	GCA	CAA	GTT	GCT	AGC	CTC	AAG	AAA	AAT	GTC	TGG	CTG	GAC	1314
Glu	Thr	Ala	Ala	Gln	Val	Ala	Ser	Leu	Lys	Lys	Asn	Val	Trp	Leu	Asp	
				405					410					415		
CGA	GGA	ACC	AGG	GCA	ACT	TTT	ATT	GAC	TTC	TCA	GTG	TAC	AAC	GCC	AAC	1362
Arg	Gly	Thr	Arg	Ala	Thr	Phe	Ile	Asp	Phe	Ser	Val	Tyr	Asn	Ala	Asn	
				420				425					430			
ATT	AAC	CTG	TTC	TGT	GTG	GTC	AGG	TTA	TTG	GTT	GAA	TTC	CCA	GCA	ACA	1410
Ile	Asn	Leu	Phe	Cys	Val	Val	Arg	Leu	Leu	Val	Glu	Phe	Pro	Ala	Thr	
		435					440					445				
GGT	GGT	GTG	ATT	CCA	TCT	TGG	CAA	TTT	CAG	CCT	TTA	AAG	CTG	ATC	CGA	1458
Gly	Gly	Val	Ile	Pro	Ser	Trp	Gln	Phe	Gln	Pro	Leu	Lys	Leu	Ile	Arg	
	450					455					460					
TAT	GTC	ACA	ACT	TTT	GAT	TTC	TTC	CTG	GCA	GCC	TGT	GAG	ATT	ATC	TTT	1506
Tyr	Val	Thr	Thr	Phe	Asp	Phe	Phe	Leu	Ala	Ala	Cys	Glu	Ile	Ile	Phe	
465					470				475					480		
TGT	TTC	TTT	ATC	TTT	TAC	TAT	GTG	GTG	GAA	GAG	ATA	TTG	GAA	ATT	CGC	1554
Cys	Phe	Phe	Ile	Phe	Tyr	Tyr	Val	Val	Glu	Glu	Ile	Leu	Glu	Ile	Arg	
				485					490					495		
ATT	CAC	AAA	CTA	CAC	TAT	TTC	AGG	AGT	TTC	TGG	AAT	TGT	CTG	GAT	GTT	1602
Ile	His	Lys	Leu	His	Tyr	Phe	Arg	Ser	Phe	Trp	Asn	Cys	Leu	Asp	Val	
			500					505					510			
GTG	ATC	GTT	GTG	CTG	TCA	GTG	GTA	GCT	ATA	GGA	ATT	AAC	ATA	TAC	AGA	1650
Val	Ile	Val	Val	Leu	Ser	Val	Val	Ala	Ile	Gly	Ile	Asn	Ile	Tyr	Arg	
		515					520					525				
ACA	TCA	AAT	GTG	GAG	GTG	CTA	CTA	CAG	TTT	CTG	GAA	GAT	CAA	AAT	ACT	1698
Thr	Ser	Asn	Val	Glu	Val	Leu	Leu	Gln	Phe	Leu	Glu	Asp	Gln	Asn	Thr	
		530				535					540					
TTC	CCC	AAC	TTT	GAG	CAT	CTG	GCA	TAT	TGG	CAG	ATA	CAG	TTC	AAC	AAT	1746
Phe	Pro	Asn	Phe	Glu	His	Leu	Ala	Tyr	Trp	Gln	Ile	Gln	Phe	Asn	Asn	
545					550				555					560		
ATA	GCT	GCT	GTC	ACA	GTA	TTT	TTT	GTC	TGG	ATT	AAG	CTC	TTC	AAA	TTC	1794
Ile	Ala	Ala	Val	Thr	Val	Phe	Phe	Val	Trp	Ile	Lys	Leu	Phe	Lys	Phe	
				565				570						575		
ATC	AAT	TTT	AAC	AGG	ACC	ATG	AGC	CAG	CTC	TCG	ACA	ACC	ATG	TCT	CGA	1842
Ile	Asn	Phe	Asn	Arg	Thr	Met	Ser	Gln	Leu	Ser	Thr	Thr	Met	Ser	Arg	
			580				585						590			
TGT	GCC	AAA	GAC	CTG	TTT	GGC	TTT	GCT	ATT	ATG	TTC	TTC	ATT	ATT	TTC	1890
Cys	Ala	Lys	Asp	Leu	Phe	Gly	Phe	Ala	Ile	Met	Phe	Phe	Ile	Ile	Phe	
		595				600						605				

FIG. 5C

CTA	GCG	TAT	GCT	CAG	TTG	GCA	TAC	CTT	GTC	TTT	GGC	ACT	CAG	GTC	GAT	1938
Leu	Ala	Tyr	Ala	Gln	Leu	Ala	Tyr	Leu	Val	Phe	Gly	Thr	Gln	Val	Asp	
610						615					620					
GAC	TTC	AGT	ACT	TTC	CAA	GAG	TGT	ATC	TTC	ACT	CAA	TTC	CGT	ATC	ATT	1986
Asp	Phe	Ser	Thr	Phe	Gln	Glu	Cys	Ile	Phe	Thr	Gln	Phe	Arg	Ile	Ile	
625					630				635						640	
TTG	GGC	GAT	ATC	AAC	TTT	GCA	GAG	ATT	GAG	GAA	GCT	AAT	CGA	GTT	TTG	2034
Leu	Gly	Asp	Ile	Asn	Phe	Ala	Glu	Ile	Glu	Glu	Ala	Asn	Arg	Val	Leu	
				645					650					655		
GGA	CCA	ATT	TAT	TTC	ACT	ACA	TTT	GTG	TTC	TTT	ATG	TTC	TTC	ATT	CTT	2082
Gly	Pro	Ile	Tyr	Phe	Thr	Thr	Phe	Val	Phe	Phe	Met	Phe	Phe	Ile	Leu	
			660					665					670			
TTG	AAT	ATG	TTT	TTG	GCT	ATC	ATC	AAT	GAT	ACT	TAC	TCT	GAA	GTG	AAA	2130
Leu	Asn	Met	Phe	Leu	Ala	Ile	Ile	Asn	Asp	Thr	Tyr	Ser	Glu	Val	Lys	
	675					680						685				
TCT	GAC	TTG	GCA	CAG	CAG	AAA	GCT	GAA	ATG	GAA	CTC	TCA	GAT	CTT	ATC	2178
Ser	Asp	Leu	Ala	Gln	Gln	Lys	Ala	Glu	Met	Glu	Leu	Ser	Asp	Leu	Ile	
	690					695					700					
AGA	AAG	GGC	TAC	CAT	AAA	GCT	TTG	GTC	AAA	CTA	AAA	CTG	AAA	AAA	AAT	2226
Arg	Lys	Gly	Tyr	His	Lys	Ala	Leu	Val	Lys	Leu	Lys	Leu	Lys	Lys	Asn	
705					710					715					720	
ACC	GTG	GAT	GAC	ATT	TCA	GAG	AGT	CTG	CGG	CAA	GGA	GGA	GGC	AAG	TTA	2274
Thr	Val	Asp	Asp	Ile	Ser	Glu	Ser	Leu	Arg	Gln	Gly	Gly	Gly	Lys	Leu	
				725					730					735		
AAC	TTT	GAC	GAA	CTT	CGA	CAA	GAT	CTC	AAA	GGG	AAG	GGC	CAT	ACT	GAT	2322
Asn	Phe	Asp	Glu	Leu	Arg	Gln	Asp	Leu	Lys	Gly	Lys	Gly	His	Thr	Asp	
			740					745					750			
GCA	GAG	ATT	GAG	GCA	ATA	TTC	ACA	AAG	TAC	GAC	CAA	GAT	GGA	GAC	CAA	2370
Ala	Glu	Ile	Glu	Ala	Ile	Phe	Thr	Lys	Tyr	Asp	Gln	Asp	Gly	Asp	Gln	
		755					760					765				
GAA	CTG	ACC	GAA	CAT	GAA	CAT	CAG	CAG	ATG	AGA	GAC	GAC	TTG	GAG	AAA	2418
Glu	Leu	Thr	Glu	His	Glu	His	Gln	Gln	Met	Arg	Asp	Asp	Leu	Glu	Lys	
	770					775					780					
GAG	AGG	GAG	GAC	CTG	GAT	TTG	GAT	CAC	AGT	TCT	TTA	CCA	CGT	CCC	ATG	2466
Glu	Arg	Glu	Asp	Leu	Asp	Leu	Asp	His	Ser	Ser	Leu	Pro	Arg	Pro	Met	
785					790					795					800	
AGC	AGC	CGA	AGT	TTC	CCT	CGA	AGC	CTG	GAT	GAC	TCT	GAG	GAG	GAT	GAC	2514
Ser	Ser	Arg	Ser	Phe	Pro	Arg	Ser	Leu	Asp	Asp	Ser	Glu	Glu	Asp	Asp	
				805					810					815		

FIG. 5D

GAT	GAA	GAT	AGC	GGA	CAT	AGC	TCC	AGA	AGG	AGG	GGA	AGC	ATT	TCT	AGT	2562
Asp	Glu	Asp	Ser	Gly	His	Ser	Ser	Arg	Arg	Arg	Gly	Ser	Ile	Ser	Ser	
			820					825					830			
GGC	GTT	TCT	TAC	GAA	GAG	TTT	CAA	GTC	CTG	GTG	AGA	CGA	GTG	GAC	CGG	2610
Gly	Val	Ser	Tyr	Glu	Glu	Phe	Gln	Val	Leu	Val	Arg	Arg	Val	Asp	Arg	
		835					840					845				
ATG	GAG	CAT	TCC	ATC	GGC	AGC	ATA	GTG	TCC	AAG	ATT	GAC	GCC	GTG	ATC	2658
Met	Glu	His	Ser	Ile	Gly	Ser	Ile	Val	Ser	Lys	Ile	Asp	Ala	Val	Ile	
	850					855					860					
GTG	AAG	CTA	GAG	ATT	ATG	GAG	CGA	GCC	AAA	CTG	AAG	AGG	AGG	GAG	GTG	2706
Val	Lys	Leu	Glu	Ile	Met	Glu	Arg	Ala	Lys	Leu	Lys	Arg	Arg	Glu	Val	
	865				870					875					880	
CTG	GGA	AGG	CTG	TTG	GAT	GGG	GTG	GCC	GAG	GAT	GAA	AGG	CTG	GGT	CGT	2754
Leu	Gly	Arg	Leu	Leu	Asp	Gly	Val	Ala	Glu	Asp	Glu	Arg	Leu	Gly	Arg	
				885					890					895		
GAC	AGT	GAA	ATC	CAT	AGG	GAA	CAG	ATG	GAA	CGG	CTA	GTA	CGT	GAA	GAG	2802
Asp	Ser	Glu	Ile	His	Arg	Glu	Gln	Met	Glu	Arg	Leu	Val	Arg	Glu	Glu	
			900					905					910			
TTG	GAA	CGC	TGG	GAA	TCC	GAT	GAT	GCA	GCT	TCC	CAG	ATC	AGT	CAT	GGT	2850
Leu	Glu	Arg	Trp	Glu	Ser	Asp	Asp	Ala	Ala	Ser	Gln	Ile	Ser	His	Gly	
		915					920					925				
TTA	GGC	ACG	CCA	GTG	GGA	CTA	AAT	GGT	CAA	CCT	CGC	CCC	AGA	AGC	TCC	2898
Leu	Gly	Thr	Pro	Val	Gly	Leu	Asn	Gly	Gln	Pro	Arg	Pro	Arg	Ser	Ser	
	930					935					940					
CGC	CCA	TCT	TCC	TCC	CAA	TCT	ACA	GAA	GGC	ATG	GAA	GGT	GCA	GGT	GGA	2946
Arg	Pro	Ser	Ser	Ser	Gln	Ser	Thr	Glu	Gly	Met	Glu	Gly	Ala	Gly	Gly	
	945				950					955					960	
AAT	GGG	AGT	TCT	AAT	GTC	CAC	GTA	TGA	TAT	GTG	TGT	TTC	AGT	ATG	TGT	2994
Asn	Gly	Ser	Ser	Asn	Val	His	Val									
				965												
GTT	TCT	AAT	AAG	TGA	GGA	AGT	GGC	TGT	CCT	GAA	TTG	CTG	TAA	CAA	GCA	3042
CAC	TAT	TTA	TAT	GCC	CTG	ACC	ACC	ATA	GGA	TGC	TAG	TCT	TTG	TGA	CCG	3090
ATT	GCT	AAT	CTT	CTG	CAC	TTT	AAT	TTA	TTT	TAT	ATA	AAC	TTT	ACC	CAT	3138
GGT	TCA	AAG	ATT	TTT	TTT	TCT	TTT	TCT	CAT	ATA	AGA	AAT	CTA	GGT	GTA	3186
AAT	ATT	GAG	TAC	AGA	AAA	AAA	ATC	TTC	ATG	ATG	TGT	ATT	GAG	CGG	TAC	3234
GCC	CAG	TTG	CCA	CCA	TGA	CTG	AGT	CTT	CTC	AGT	TGA	CAA	TGA	AGT	AGC	3282

FIG. 5E

CTT	TTA	AAG	CTA	GAA	AAC	TGT	CAA	AGG	GCT	TCT	GAG	TTT	CAT	TTC	CAG	3330
TCA	CAA	AAA	TCA	GTA	TTG	TTA	TTT	TTT	TCC	AAG	AGT	GTG	AAG	GAA	AAT	3378
GGG	GCA	ATT	CCT	TTC	CAC	TCT	GGC	ATA	GTT	CAT	GAG	CTT	AAT	ACA	TAG	3426
CTT	TCT	TTT	AAG	AAA	GGA	GCC	TTT	TTT	TTC	AAC	TAG	CTT	CCT	GGG	GTA	3474
AAC	TTT	TCT	AAA	AGA	TAA	AAT	GGG	AAG	GAA	CTC	CAA	ACT	ATG	ATA	GAA	3522
TCT	GTG	TGA	ATG	GTT	AAG	ATG	AAT	GTT	AAA	TAC	TAT	GCT	TTT	TTG	TAA	3570
GTT	GAT	CGT	ATC	TGA	TGT	CTG	TGG	GAC	TAA	CTG	TAT	CAC	TTA	ATT	TTT	3618
ACC	TTA	TTT	TGG	CTC	TAA	TTT	GAA	TAA	GCT	GAG	TAA	AAC	CAC	CAA	AGA	3666
TCA	GTT	ATA	GGA	TAA	AAT	GGC	ATC	TCT	AAC	CAT	AAC	ACA	GGA	GAA	TTG	3714
GAA	GGA	GCC	CTA	AGT	TGT	CAC	TCA	GTT	TAA	TTT	CTT	TTA	ATG	GTT	AGT	3762
TTA	GCC	TAA	AGA	TTT	ATC	TGC	ATA	TTC	TTT	TTC	CCA	TGT	GGC	TCT	ACT	3810
CAT	TTG	CAA	CTG	AAT	TTA	ATG	TTA	TAA	CTC	ATC	TAG	TGA	GAC	CAA	CTT	3858
ACT	AAA	TTT	TTA	GTA	TGC	ACT	GAA	AGT	TTT	TAT	CCA	ACA	ATT	ATG	TTC	3906
ATT	TTA	AGC	AAA	ATT	TTA	AGA	AAG	TTT	TGA	AAT	TCA	TAA	AGC	ATT	TGG	3954
TTT	TAA	ACT	ATT	TTA	AGA	ATA	TAG	TAC	TCG	GTC	AGG	TAT	GNN	NCA	CGC	4002
CTG	TAA	TCC	CAG	CAC	TTT	GGG	AGG	CCG	AAA	CAG	GCG	AAT	CAC	TTG	AGC	4050
CCA	GGA	GTT	CAA	GAC	CAA	CAT	GGG	CAA	TGT	GGC	GAA	ACT	CCA	TCT	CTA	4098
CAA	AAA	ATG	CAA	AAA	TAA	AAA	ATA	TAG	TAC	TCA	AGT	ATT	CTT	GAT	CCT	4146
GTG	TTT	CAA	AAC	TAG	AAT	TTG	TAA	TGC	AAA	TGG	AGC	TCA	GTC	TAA	TAA	4194
AAA	AGA	GGT	TTT	GGT	ATT	AAA	AGT	TCA	TAC	ATT	AGA	CAG	TAT	CAG	CCA	4242
AAA	TTT	GAG	TTA	GCA	ACA	CTG	TTT	TCT	TTA	CGA	GAG	GGT	CTC	ACC	CAA	4290
ATT	TAT	GGG	GAG	AAA	TCT	ATT	TCT	CAA	AAA	AAA	AAA	ATC	TTC	TTT	TAC	4338
AGA	AAT	GTT	GAG	TAA	GGT	GAC	ATT	TTG	AGC	GCT	AAT	AAG	CAA	AAG	AGC	4386
ATG	CAG	TGC	TGT	TGA	ATA	ACC	CTC	ACT	TGG	AGA	ACC	AAG	AGA	ATC	CTG	4434
TCG	TTT	AAT	GCT	ATA	TTT	TAA	TTT	CAC	AAG	TTG	TTC	ATT	TAA	CTG	GTA	4482
GAA	TGT	CAG	TCC	AAT	CTC	CAA	TGA	GAA	CAT	GAG	CAA	ATA	GAC	CTT	TCC	4530

FIG. 5F

AGG	TTG	AAA	GTG	AAA	CAT	ACT	GGG	TTT	CTG	TAA	GTT	TTT	CCT	CAT	GGC	4578
TTC	ATC	TCT	ATC	TTT	ACT	TTC	TCT	TGA	ATA	TGC	TAC	ACA	AAG	TTC	TTT	4626
ATT	ACT	ACA	TAC	TAA	AGT	TTG	CAT	TCC	AGG	GAT	ATT	GAC	TGT	ACA	TAT	4674
TTA	TGT	ATA	TGT	ACC	ATG	TTG	TTA	CAT	GTA	AAC	AAA	CTT	CAA	TTT	GAA	4722
GTG	CAG	CTA	TTA	TGT	GGT	ATC	CAT	GTG	TAT	CGA	CCA	TGT	GCC	ATA	TAT	4770
CAA	TTA	TGG	TCA	CTA	GAA	AGT	CTC	TTT	ATG	ATA	CTT	TTT	ATT	GTA	CTG	4818
TTT	TTC	ATT	TCA	CTT	GCA	AAA	TTT	TGC	AGA	ATT	CCT	CCT	TTC	TAC	CCA	4866
TAA	ATT	ACA	TAT	AAT	TTT	TCT	TCT	TTA	GTC	ATG	GAG	AAC	NCC	CCC	CCA	4914
TCA	TCT	CAN	CCC	TAT	TAN	CTT	TCC	CAT	GTG	TAC	TGG	TAT	TAT	TAA	AAA	4962
GAC	ATT	TAC	ATA	CGC	AAG	TTT	TTC	ACT	GAC	AAN	CAA	GAA	TGT	TAT	TAA	5010
TGT	GTA	ATA	CTG	AGC	ACN	TTT	ACT	TCT	TAA	TAA	AAA	CTT	GAT	ATA	NT	5057

FIG. 5G